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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

KAREL VAN DEN BERG

Group Art Unit: 3671

Examiner: V. Batson

Serial No.: 09/764,292

Filed: January 19, 2001

For: AN UNMANNED VEHICLE FOR DISPLACING MANURE

Docket No.: 8553/206

REMARKS CONCERNING INFORMATION DISCLOSURE STATEMENT

To the Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

It was stated on page 16 of an Amendment filed March 7, 2005 that it was the intention of the undersigned to submit an Information Disclosure Statement which would include the three patents cited on pages 15 and 16 of the Amendment and others. The three cited patents brought to the attention of the Patent Examiner in the Amendment were: (1) U.S. Patent No. 5,109,566 to Kobayashi et al for a self-running cleaning apparatus; UK Patent No. GB 2313191A of Tae Sig Kim directed to a robot cleaner direction sensor; and European Patent Application No. 0 142 594 of Okumura directed to a sensor such as a gas rate gyro. As proffered in the Amendment, copies of these patents were submitted in the Information Disclosure Statement dated March 11, 2005. In addition, other prior art patents and literature were submitted, which included references that

had been cited in International Patent No. PCT/NL00/00313 of which the instant Application is a continuation.

In the Official Action of March 5, 2004, in the paragraph bridging pages 2 and 3, a number of the claims were rejected under 35 U.S.C. §112, first paragraph. This paragraph provides that the Specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains or which is most nearly connected, to make and use same, and shall set forth the best mode contemplated by the inventor carrying out his invention. [underlining added]

In the Specification (Second Substitute Specification) on page 3 it is set forth that the unmanned vehicle is equipped with orientation means for following a path for determining the position of the vehicle in a space such as a stable or meadow. Specific guidance means is provided such as detection means for detecting apertures in the floor, detecting the reinforcement in the concrete or detecting electricity conducting wire, or a combination thereof. It is also set forth that additional orientation means may comprise a compass or a gyroscope or an air level or a clinometer or an accelerometer or a combination thereof together with the statement that these orientation means are currently available in a form which is suitable for being applied in electric circuits so that integrated orientation means can easily be assembled from the various components. The issue is therefore whether a person skilled in the art designing unmanned vehicles could utilize a compass, gyroscope, air level device, clinometer and an accelerometer as set forth in the Specification without more specific instructions. On this, is submitted that it would be difficult for one skilled in the art of unmanned vehicles to avoid doing so, particularly with the compass, gyroscope, clinometer and accelerometer. Most descriptions of surface based

unmanned vehicles leave no doubt that obstacle avoidance means, means to prevent sudden drop-offs, position awareness means and other means such as signal emitting and signal receiving means, as well as steering means and propelling means are requisite. The prior art discloses that the guidance means may include a compass or may be an inertia guidance which inevitably includes a gyroscope. The use of clinometers (also known as inclinometers) are frequently found and with inertia guidance accelerometers are usually, if not always, required. The two patents to Kadonoff et al are of particular interest. Incidentally there are a number of other like patents which also could have been included but were not to avoid redundancy.

Particular attention is invited to the first sentence of the first paragraph on page 3 of the Specification (Second Substitute Specification) wherein it is stated that the orientation means provided is not only for a stable, but also a meadow. In the United States and New Zealand it is not uncommon for dairy herds to number over 1,000 cows and dairy farms are frequently located in hilly country such as in Wisconsin and, for that matter, nearby Virginia and Maryland. Here the measurement of air pressure such as with a comparative altimeter can be a valuable adjunct to the orientation means.

In U.S. Patent No. 4,306,329 of Yokoi which was cited by the Examiner, attention is invited to the paragraph commencing on line 6 of column 5 of the patent wherein it is stated that the wireless remote control mechanism, including the transmitter 34 and electronic control 14 are well known in the art and hence no details thereof are specifically provided. In U.S. Patent No. 4,482,960 of Pryor, also cited by the Examiner, in the paragraph commencing on line 39 of column 5, it is stated that the degree of programmability of the system involved relates in large measure to the ability to tell where one is at on the farm. This statement, in general, would apply to almost all dairy farms wherein the instant invention would operate to clean manure from

meadows. In U.S. Patent No. 5,507,058 to Minami et al, attention is invited to the paragraph commencing on line 19 of column 21 to the effect that in variations in the perimeter-cleaning mode, the processor of the inventive apparatus monitors the tilt sensors and executes a rotation upon occurrence of any of the variety of tilt conditions. A clinometer, as its name implies, is a form of "tilt sensor."

As the Examiner is undoubtedly aware, we are currently experiencing a revolution which broadly is considered to be "information technology" or "IT," a term that brings to mind a multitude of images. More and more tasks are being automated such as that of a bank teller via an ATM machine, automated airline kiosks, unmanned registers for charging purchases in a grocery store and, to the consternation of many, telephone answering services with menus. It can be difficult for an industry to keep up on its own with the latest commercial technologies which are evolving at faster and faster rates. Sensors are becoming increasingly accurate and diversified. Attention is invited to U.S. Patent No. 5,581,034 to Dao et al, wherein, commencing column 1, line 12 with the Description of Related Art, a number of types of accelerometers are set forth. These may vary in cost from less than $20.00 to several thousand dollars. Contemporary commercial software typically falls within three categories: flexible - a code that can be used in multiple applications with few changes; open-source -- public-domain software such as Linux, Source and executable codes which are available for public use and there is an adhoc network of experts who fix glitches as they are identified; and COTS-proprietary software widely sold and distributed such as Microsoft's Windows operating system. The programming language and applications of their use are often matters of choice and the "how" is, much more often than not, a selection of various means and engineering within the skill of the art.

It is respectfully submitted that the issue of whether or not the instant Application meets the requirements of 35 U.S.C. §112, first paragraph, is not borderline; it does. In other words, for a designer of an unmanned vehicle, off-the-shelf items such as compasses, gyroscopes, air pressure determination means such as comparative altimeters, clinometers and accelerometers are well known components well within the skill of the art and a statement in the Specification that they should be used in the instant unmanned vehicle in conformity with the skill of the art is, per se, sufficient to meet the requirements of 35 U.S.C. §112, first paragraph. It is well within the skill of the art to provide that the manure displacement means may include a brush, slide or spraying unit while at the same time providing the major support for the vehicle.

Respectfully submitted,

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